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(54) **Apparatus for consecutively discharging objects from containers.**

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Apparatus for consecutively discharging objects from containers

The invention relates to an apparatus for consecutively discharging objects from containers moving along a fixed path one after another having a number of discharge points, in which the first of the said containers discharges at a first discharge point, the second container discharges at a second discharge point upstream of the first thereof in the direction of movement of the containers and so on until a container is discharged at the last one of the said discharge points, the said apparatus being provided with a rotatably arranged control sleeve carrying at least one discharge stop located at each of the said discharge points, each of said discharge stops being located in an angular position particular thereto on the control sleeve and depending on the angular position of the control sleeve in the path of discharge pawls each of which is mounted to a container, in which a driving means is provided to mechanically bias the control sleeve in a particular direction of rotation and in which each discharge point is provided with a detent member which co-operates with a corresponding one of a number of stop pawls all of which are arranged to co-operate with an appropriate container in order to cancel out the operative co-operation between a respective one of the stop pawls with a corresponding one of the detent members such that the control sleeve can exercise a rotating movement under the influence of the mechanical bias imparted thereto by the said driving means, wherein a resetting device is present, which is adapted to move the driving means to a particular position against the influence of the mechanical bias imparted thereto and thereafter to subject the driving means again to the mechanical bias which is also imparted in the said particular direction to the control sleeve, said resetting device being arranged to execute a complete rotation or a fraction thereof, the operation of the resetting device being achieved by the positive operation of a releasing member.

Such an apparatus is described in the Dutch Patent Specification 144,210.

The object of the present invention is to provide an improvement to this apparatus which, through greater simplicity, has a higher degree of reliability and in which, after a container has been discharged at each of all the discharge points, the control sleeve requires less time in assuming a position in which discharge can once again take place at the first of the discharge points.

The above-quoted objects are achieved according to the invention in that the control sleeve is coupled by a free-wheel or unidirectional clutch to a driving member which forms part of the driving means and in that the said releasing member is connected to said driving member.

According to another aspect of the invention, and in order to inhibit continuing rotation of the control sleeve during and after resetting of the resetting device, the control sleeve is further provided with another detent member arranged to co-operate with yet another stop pawl which is also arranged to co-operate with an appropriate container, and the said other detent member and stop pawl co-act to permit the control sleeve to continue to rotate over a greater angle of rotation than that over which the control sleeve is permitted to rotate after operation of each of the preceding stop pawls.

In order to inhibit reversal of direction of the control sleeve during the resetting of the driving member, and in accordance with another aspect of the invention, a reversely operating detent member and a reversely operating stop pawl are provided both of which act to inhibit reverse rotation of the control sleeve during resetting of the driving member.

In the application of the invention, it is of importance that the driving member has a very reliable and constant coupling with a releasing member, and an equally reliable connection to, for example, a pulling mechanism for the generation of a mechanical tension which provides an urging force.

According to yet another aspect of the invention, the driving member is of a synthetic material, the pulling members are integral with the driving member in the zones of connection therewith and of the same synthetic material, and the driving member is urged in the direction towards the control sleeve under spring action and possesses tangentially rising and falling surfaces on the end surface thereof lying opposite the control sleeve, which rising and falling surfaces co-operate with corresponding portions of the oppositely lying end surface of the control sleeve.

In the application of the invention, the control sleeve can be permitted to make a complete revolution, half a revolution, a third of a revolution etc. In practice it has appeared that, with a sufficient degree of separation between discharge stops a high operating speed is obtainable by arranging two discharge stops per discharge point and by adjusting the resetting device to reset the driving member with a rotational movement as small as half a revolution.

The invention is now to be further described with reference to the accompanying drawings in which:

Fig. 1 is a schematic view of the control sleeve with the associated discharge stops, stop pawls and detent members;

Fig. 2 is a detailed cross-section along the line II—II;

Fig. 3 is a plan view of the left portion of Fig. 1;

Fig. 4 is a cross-section along the line IV—IV;

Fig. 5 is a cross-section along the line V—V;
Fig. 6 shows a cross-section along the line VI—VI;

Fig. 7 shows a schematic view of the resetting mechanism;

Fig. 8 shows a schematic side elevation of the mechanism of Fig. 7.

Fig. 1 shows a spindle 1 with a control sleeve rotatably mounted thereon and generally indicated by the reference numeral 2. The leftwardly disposed end face 3 of the control sleeve 2 is formed to provide a half-member of a coupling operating in one direction only. The spindle 1 also accommodates a driving member 4 thereon which is affixed to two pulling members 5 and 6 and which is urged toward the control sleeve 2 by means of a compression spring 7. The control sleeve carries a first discharge stop 8 thereon, which discharge stop 8 is produced as a simple circumscribing ring and which, as the result thereof, executes a discharge working effect in all positions of the control sleeve. In addition hereto, discharge stops 9, 10, 11, 12 and 14 are also carried on the control sleeve 2 and arranged with a particular radial angle of displacement with respect to one another. As will appear from the following, pairs of corresponding discharge stops such as those indicated by the reference numerals 11', 12' and 13' are arranged in the same axial positions on the control sleeve 2, other pairs hereof are not shown.

As will be seen from the cross-section II—II of fig. 2, a stop pawl 14 is arranged on a spindle 15 for free rotation with respect thereto and arranged to co-operate with a pair of detent members 16 carried by the control sleeve 2. The stop pawl 14 cannot be operated by a container and only acts to inhibit leftward rotation (anti-clockwise as viewed in fig. 2) of the control sleeve 2 in certain positions thereof and in a manner later to be described herein.

Fig. 3 shows the same stop pawl 14 together with the driving member 4 in plan view, from which figure it will be seen that the driving member 4 is provided with axially rising faces on the end thereof adjacent to control sleeve 2 and one of which rising surfaces is indicated by the reference numeral 17. The action of these faces is such that when the driving member 4 is rotated, it can move leftward against the action of the compression spring 7 and thereafter spring back again. This form of mechanism is well-known in itself and, as drawn, the axial faces 18 of the driving member 4 and the control sleeve 2 lie in engagement with one another.

Fig. 4 shows a cross-section along the line IV—IV from which it will be seen that the control sleeve 2 is provided with detent members 19 arranged in diametrically opposite positions, with which detent members a stop pawl 22 can co-operate. This last mentioned stop pawl 22 is also mounted on the spindle 15 and is provided with an articulated arm 21

which accommodates a follower-roller 20 thereon. The chain-dotted lines in fig. 4 are representative of a part of an appropriate container 23 and, as will be seen from fig. 4, this part of the container will engage the follower-roller 20 and as a result the stop pawl of fig. 4 will be caused to pivot clockwise as viewed in fig. 4. Through this action, the stop-pawl 22 is removed from engagement with detent member 19 whereafter control sleeve 2 is permitted to rotate clockwise as viewed in fig. 4.

In fig. 5 a cross-section along the line V—V is shown, that is to say a cross-section of the following one of the stop pawls designated by the reference numeral 25. In this figure the stop pawl 25 is shown pivoted somewhat rightward due to the fact that the articulated arm is not in its lowest point of engagement with the radial notch in the control sleeve 2. In these relative positions of the control sleeve 2 and the articulated arm 24 of the pawl 25, the impact effect between the follower-roller 20 of pawl 25 and the portion 23 of the appropriate container is less. This condition in itself has no functional consequences, but the reduced movement of the stop pawl 25 is otherwise of no hindrance.

After the appropriate container has released the stop pawl 22 through the engagement of the follower-roller 22 therewith, the control sleeve 2 will rotate under the action of the urging force applied thereto and through which, shown in fig. 5, the stop pawl 25 comes into operative engagement with its associated detent member 19'. As the result of this last quoted operative engagement, and due to the fact that the notch in the control sleeve 2 constitutes the detent member, this implies a counter clockwise pivoting of the articulated arm 24 of the stop pawl 25, through which the associated follower-roller is moved in its entirety and completely in the path of a following appropriate container. This means that, via the portion 23 thereof, a following container will cause the stop pawl 25 to pivot and through which action the control sleeve 2 is released again and so on.

The discharge of containers can now commence. Beginning with the conditions obtaining as illustrated, the discharge operations for the containers ensue as follows: The first of the containers travelling from right to left engages the follower-roller 20 through which the stop pawl 22 is raised to allow the control sleeve to rotate one step. These actions result in displacement of the discharge stop 9 in the path of a discharge member 58 of the following container. The portion 23 of this container, through its co-operation with the follower-roller of the stop pawl 25, ensures that the control sleeve rotates one step further. These operations continue such that successive stop pawls 26, 26', 27 and 28 raise an associated detent member to permit the control sleeve to rotate further somewhat, and through which the discharge stops 10, 11, 12 and 13 are successively set to appropriate positions in order to be

enabled to engage the discharge member 58 of a concerned one of the containers. The containers now discharge their contents in a manner which is not illustrated or described herein since this process forms no part of the invention.

After six containers have been discharged, the following container comes into engagement with the stop pawl 29 co-operating with a detent member 30. The control sleeve, as illustrated, is rotated through an angle of 20° for each step such that after stop pawls 22, 25, 26, 27 and 28 have been operated, the control sleeve 2 has rotated through an angle of 120° approximately. After stop pawl 29 has been raised, the control sleeve rotates through 60°. Time is available for this relatively larger angular movement which is equal to the time required by the container, co-operating with the stop pawl 29, to reach the stop pawl 22. A second advantage of this larger angular movement is that a relatively large movement is available to control the operation of a mechanism for resetting the driving member 4, which mechanism is later to be described herein.

Through rotation of the control sleeve 2, the pulling member 6 is drawn even further upward (see figs. 7 and 8). This pulling member 6, principally consisting of a tape, is integral with the driving member 4 made of a synthetic material and is affixed to a suitable fixing member therefor designated by the reference numeral 31. This last quoted member is connected, by means of a threaded rod 32 coupled to an adjusting member 33, to a thin rod 34 the extreme end of which is affixed to an arm 36 pivotably mounted on a spindle 35. This arm 36 is provided with a follower 37 which co-operates with a cam 38. The cam is rotatable on the spindle 39 together with a disc 40 having a peripherally notched portion 41 which in turn has a step profiled portion 42. The cam 38 and disc 40 are driven clockwise as viewed in fig. 7 by means of a friction coupling. The steep profiled peripheral portion of the disc 40 co-acts with a stop member 43 to impede rotation of the disc 40 and the cam 38, unless the stop member 43 is raised clear of the peripherally notched portion 41 of the disc 40. This raising action is made possible insofar that the stop member 43 is mounted on a lever arm 44 pivotably arranged on the spindle 45 and provided with a stop 46 affixed to the lever arm 44. The stop 46 is arranged to co-operate with a release member 47 affixed to the rod 34.

The pulling member 5, also integral with the driving member 4, is connected at its lower end to one end of a lever arm 48 which is pivotably arranged on the spindle 49. The other end of the lever arm 48 is connected to one end of a tension spring 51 by means of a pivot connection 50. The other end of the tension spring 51 is connected at a point 52 to a fixed portion of the apparatus frame. Through this arrange-

ment mechanical tension is exercised on the driving member 4.

The operation of the resetting device takes place as follows:

5 When the driving member 4 pivots the control sleeve 2 clockwise in fig. 7 through the co-operation of a container with stop pawls 22, 25, 26 etc. to 29, the release member 47 finally comes into engagement with the stop 46 and pivots the lever arm 44 clockwise to release the disc 40 which then rotates through one revolution through which the cam 38 comes into engagement with the follower 37. These actions result in pivoting of the driving member 4 counter-clockwise through the combined actions of the rod 34, the threaded rod 32, the adjusting member 33 and the pulling member 6. The counter-clockwise pivoting of the driving member amounts to a good half stroke thereof. When the cam 38 is no longer operatively co-operating with the follower 37 the driving member moves somewhat back, through which the coupling operating in one direction of rotation only, established between the right end face of the driving member 4 and the left end face of the control sleeve 2, once again comes into operation. Due to the fact that this movement has also moved the release member 47 downward, the lever arm 44 can now pivot back again whereby the stop member 43 can again engage the periphery of the disc 40 whereafter, on completion of a revolution of the disc 40, the lever arm 44 can move downward somewhat further to allow the stop member 44 to engage the steeply sloping peripheral portion of the disc 40. Through this engagement, the lever arm 44 has reached its original position. Since at the instant of reverse movement of the stop pawl 22 reverse rotation of the control sleeve 2 is inhibited by the stop pawl 14, the driving member 4 can rotate back without the control sleeve assuming an undefined position.

The apparatus according to the invention is simple which facilitates surveyance thereof and access thereto, such that a high degree of reliability is obtained apart from a higher permitted operating speed.

Claims

1. Apparatus for consecutively discharging objects from containers moving along a fixed path one after another having a number of discharge points, in which the first of the said containers discharges at a first discharge point, the second container discharges at a second discharge point upstream of the first thereof in the direction of movement of the containers and so on until a container is discharged at the last one of the said discharge points, the said apparatus being provided with a rotatably arranged control sleeve (2) carrying at least one discharge stop (9, 10, 11, 12, 13, 9', 10', 11', 12', 13'), located at each of the said discharge points, each of said discharge stops being

located in an angular position particular thereto on the control sleeve (2) and depending on the angular position of the control sleeve in the path of discharge pawls (58) each of which is mounted to a container, in which a driving means (4, 17, 18, 5, 48, 49, 50, 51) is provided to mechanically bias the control sleeve in a particular direction of rotation and in which each discharge point is provided with a detent member (19, 19') which co-operates with a corresponding one of a number of stop pawls (22, 25, 26, 26', 27) all of which are arranged to co-operate with an appropriate container in order to cancel out the operative co-operation between a respective one of the stop pawls with a corresponding one of the detent members such that the control sleeve (2) can exercise a rotating movement under the influence of the mechanical bias imparted thereto by the said driving means, wherein a resetting device (31—47) is present, which is adapted to move the driving means to a particular position against the influence of the mechanical bias imparted thereto and thereafter to subject the driving means again to the mechanical bias which is also imparted in the said particular direction to the control sleeve, said resetting device being arranged to execute a complete rotation or a fraction thereof, the operation of the resetting device being achieved by the positive operation of a releasing member (47) characterized in that the control sleeve (2) is coupled by a freewheel or unidirectional clutch (17, 18) to a driving member (4) which forms part of the driving means and in that the said releasing member (47) is connected to said driving member (4).

2. Apparatus according to claim 1 characterized in that the said resetting coupling is provided with a cam (38) which is arranged to co-operate with a cam-follower (37) positively connected to the driving member (4).

3. Apparatus as claimed in any of the preceding claims, characterized in that the said control sleeve (2) is further provided with another detent member (30) arranged to co-operate with yet another stop pawl (29) which is also arranged to co-operate with an appropriate container, and in that the said other detent member and stop pawl co-act to permit the control sleeve to continue to rotate over a greater angle of rotation than that over which the control sleeve is permitted to rotate after operation of each of the preceding stop pawls (22, 25, 26, 26', 27, 28).

4. Apparatus as claimed in any one of the preceding claims characterized in that the said driving member (4) is arranged co-axial with the said control sleeve (2) and rotates co-axially with respect thereto.

5. Apparatus as claimed in any one of the preceding claims characterized in that a reversely operating detent member (16) and a reversely operating stop pawl (14) are provided both of which act to inhibit reverse rotation of

the control sleeve (2) on resetting of the driving member (4).

6. Apparatus as claimed in any one of the preceding claims characterized in that the said driving member (4) is constituted by a rotating roller with integrally coupled pulling members (5, 6) one of which is connected to a pulling mechanism (48—52) for applying a pulling force and the other of which carries a releasing member (47) and is further connected to the resetting device (35—46) in order to be subjected to the pulling force through which the driving member rotates back against the pulling force of the said mechanism (48—52) acting on the first pulling member (5).

7. Apparatus according to claim 6 characterized in that the driving member (4) is of synthetic material and that the pulling members (5, 6) are integral with the driving member (4) in the zones of connection therewith and of the same synthetic material, in which the driving member (4) is urged in the direction towards the control sleeve under spring action (7) and possesses tangentially arranged rising (17) and steeply falling (18) surfaces on the end face thereof lying opposite the control sleeve (2), said rising and falling surfaces co-operating with corresponding portions of the oppositely lying end surface of the control sleeve.

8. Apparatus according to any one of the preceding claims characterized in that two discharge stops (11, 11'; 12, 13'; 13, 13') are provided for each discharge point and in that the said resetting device (35—47) is operative to reset the driving member (4) half a revolution.

Revendications

1. Appareil permettant le déchargement échelonné d'objets placés dans des conteneurs se déplaçant l'un après l'autre le long d'un parcours fixe sur lequel le premier de ces conteneurs est vidé en un premier point de déchargement, le second conteneur est vidé en un second point de déchargement en amont du premier point dans le sens de déplacement des conteneurs, et ainsi de suite jusqu'à ce qu'un conteneur soit déchargé au dernier de ces points de déchargement, cet appareil comportant une bague tournante de commande (2) supportant au moins une butée de déchargement (9, 10, 11, 12, 13, 9', 10', 11', 12', 13') située à chacun des points de déchargement, chacune de ces butées de déchargement occupant sur la bague de commande (2) une position angulaire particulière par rapport à ceux-ci et dépendant de la position angulaire de la bague de commande sur les cliquets de déchargement successifs (58) dont chacun est monté sur un conteneur pourvu d'un dispositif d'entraînement (4, 5, 17, 18, 48, 49, 50, 51) qui permet d'orienter mécaniquement la bague de commande selon un sens de rotation particulier et où chaque point de déchargement possède un élément d'arrêt (19, 19') agissant

avec l'élément correspondant de l'un des cliquets d'arrêt (22, 25, 26, 26', 27) qui sont tous réglés de façon à agir sur un conteneur donné afin d'annuler l'interaction entre l'un des cliquets d'arrêt et l'élément d'arrêt correspondant, de telle manière que la bague de commande (2) puisse déclencher un mouvement de rotation sous l'effet de l'orientation mécanique déterminée sur elle par le dispositif d'entraînement, dans lequel un dispositif de recalage (31—47) est prévu pour amener le dispositif d'entraînement sur une position donnée opposée à l'action de l'orientation mécanique subie par celui-ci, puis pour replacer le dispositif d'entraînement sous le contrôle de l'orientation mécanique qui est également communiquée dans le sens particulier indiqué à la bague de commande, ce dispositif de recalage étant réglé afin d'effectuer une rotation complète ou partielle, le fonctionnement du dispositif de recalage étant assuré directement par un déclencheur (47, caractérisé en ce que la bague de commande (2) est couplée par un accouplement à roue libre ou uni-directionnel (17, 18) à un élément d'entraînement (4) appartenant au dispositif d'entraînement et en ce que le déclencheur (47) est relié à cet élément d'entraînement (4).

2. Appareil selon la revendication 1, caractérisé en ce que cet accouplement de recalage possède une came (38) associée à un galet (37) relié directement à l'élément d'entraînement (4).

3. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que la bague de commande (2) est aussi équipée d'une autre élément d'arrêt (30) associé avec un autre cliquet d'arrêt (29) lui aussi réglé pour fonctionner en association avec un conteneur approprié, et en ce que ces autres éléments d'arrêt et cliquet d'arrêt associés permettant à la bague de commande de continuer à tourner selon un angle de rotation supérieur à celui selon lequel la bague de commande peut tourner après l'intervention de chacun des cliquets d'arrêt précédents (22, 25, 26, 26', 27, 28).

4. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que l'élément d'entraînement (4) se trouve sur le même axe que la bague de commande (2) et tourne coaxialement par rapport à celle-ci.

5. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que un élément d'arrêt (16) fonctionnant en sens inverse et un cliquet d'arrêt (14) fonctionnant en sens inverse sont prévus tous deux pour interdire la rotation en arrière de la bague de commande (2) lors du recalage de l'élément d'entraînement (4).

6. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que l'élément d'entraînement (4) est constitué par un galet mobile solidaire d'éléments de traction (5, 6) dont l'une est relié à un mécanisme de traction (48—52) afin d'exercer

un effort de traction et l'autre porte un déclencheur (47) et est en outre relié au dispositif de recalage (35—46) afin de recevoir l'effort de traction par lequel l'élément d'entraînement tourne en arrière à l'encontre de l'effort de traction de ce mécanisme (48—52) agissant sur le premier élément de traction (5).

7. Appareil selon la revendication 6, caractérisé en ce que l'élément d'entraînement (4) est fait d'une matière synthétique et en ce que les éléments de traction (5, 6) sont solidaires de l'élément d'entraînement (4) dans les zones où ils sont en contact avec lui et sont faits de la même matière synthétique, dans lequel l'élément d'entraînement (4) est poussé vers la bague de commande sous l'effet d'un ressort (7) et possède des surfaces tangentielles montantes (17) et fortement tombantes (18) sur sa face extérieure opposée à la bague de commande (2), ces surfaces montantes et tombantes étant associées aux parties correspondantes de la surface extérieure opposée de la bague de commande.

8. Appareil selon l'une quelconque des revendications précédentes, caractérisé en ce que deux butées de déchargement (11, 11'; 12, 12'; 13, 13') sont prévus pour chaque point de déchargement et en ce que le dispositif de recalage (35—47) sert à recaler d'un demi-tour l'élément d'entraînement (4).

Patentansprüche

1. Vorrichtung zur Ausladung von Gegenständen aus Behältern, die entlang einer festen Bahn hintereinander bewegen, versehen mit einer Zahl ausladepunkten, wobei der erste der genannten Behälter in einem ersten Ausladepunkt ausladet, der zweite Behälter in einem zweiten Ausladepunkt stromaufwärts des ersten in der Bewegungsrichtung der Behälter und so weiter bis ein Behälter ausladet in dem letzten der Ausladepunkte, wobei die genannte Vorrichtung mit einer drehbar montierten Steuerhülse (2) versehen ist, die wenigstens einen Ausladeanschlag (9, 10, 11, 12, 13, 9', 10', 11', 12', 13') trägt, die sich je in einem der Ausladepunkte befinden, wobei jeder der Ausladeanschlüsse sich in einer eigenen Winkellage auf der Steuerhülse (2) befindet und in Abhängigkeit der Winkellage der Steuerhülse in der Bahn von Ausladeklinken (58), die je an einem Behälter montiert sind, ein Antriebsmittel (4, 17, 18, 5, 48, 49, 50, 51) vorgesehen ist um die Steuerhülse mechanisch vorzuspannen in einer bestimmten Richtung und wobei jeder Ausladepunkt mit einem Anhalteteil (19, 19') versehen ist, der mit dem Zutreffenden einer Zahl von Sperrklinken (22, 25, 26, 26', 27) die alle eingerichtet sind um mit dem zugehörigen Behälter zusammen zu arbeiten um die Zusammenarbeit zwischen einer diesbezüglichen der Sperrklinken mit dem zugehörigen der Anhalteteile zu beheben, derart dass die Steuerhülse (2) eine Drehbewegung

ausüben kann unter Einfluss der mechanischen Vorspannung, die durch dem Antriebsmittel auf sie ausgeübt wird, zusammenarbeitet, und wobei eine Rückstellvorrichtung (31—47) anwesend ist, die eingerichtet ist das Antriebsmittel in eine bestimmte Lage zu bringen entgegen der mechanischen Vorspannung, die auf ihn ausgeübt wird und verfolglich das Antriebsmittel wieder der mechanischen Vorspannung zu unterwerfen, die auch in der bestimmten Richtung auf die Steuerhülse ausgeübt wird, welche Rückstellvorrichtung eingerichtet ist eine vollständige Umdrehung oder einen Bruchteil derselben durch zu führen, und wobei die Wirkung der Rückstellvorrichtung verursacht wird von der positiven Wirkung eines Freigebeteils (47), dadurch gekennzeichnet, dass die Steuerhülse (2) mittels einer Freilauf- oder Einrichtungskupplung (17, 18) mit einem Antriebsteil (4) verbunden ist, der ein Teil des Antriebsmittels bildet und dass der Freigebeteil (47) mit dem Antriebsteil (4) verbunden ist.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, dass die genannte Rückstellkupplung mit einem Nocken (38) versehen ist, die eingerichtet ist mit einem Nockenfolgeteil (37) zusammen zu arbeiten, der positiv mit dem Antriebsteil (4) verbunden ist.

3. Vorrichtung nach einem oder mehreren der vorangehenden Ansprüche, dadurch gekennzeichnet, dass die Steuerhülse (2) weiter mit einem anderen Anhalteteil (30) versehen ist, der eingerichtet ist mit noch einer anderen Sperrklinke (29) zusammen zu arbeiten, der auch eingerichtet ist mit dem zutreffenden Behälter zusammen zu arbeiten, und dass der andere Anhalteteil und Sperrklinke zusammenarbeiten um die Steuerhülse zu gestatten über einen grösseren Drehungswinkel zu drehen als denjenigen über den die Steuerhülse Steuerhülse gestattet ist zu drehen nach der Wirkung von jeder der eher genannten Sperrklinken (22, 25, 26, 26', 27, 28).

4. Vorrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass der Antriebsteil (4) ein-achsrig mit der

Steuerhülse (2) eingerichtet ist und ein-achsrig zu ihr umdreht.

5. Vorrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass ein entgegengesetzt arbeitender Anhalteteil (16) und eine entgegengesetzt arbeitende Sperrklinke (14) angeordnet sind, die beide wirksam sind um entgegengesetzte Drehung der Steuerhülse (2) zu verhindern beim Rückstellen des Antriebsteils (4).

6. Vorrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass der Antriebsteil (4) gebildet wird von einer drehenden Walze mit integral verbundenen Zugteilen (5, 6), wovon einer mit einem Zugmechanismus (48—52) verbunden ist um Zugkraft auszuüben und der andere einen Freigebeteil (47) trägt und weiter mit dem Rückstellvorrichtung (35—46) verbunden ist um der Zugkraft ausgesetzt zu werden durch welche der Antriebsteil zurückdreht entgegen der Zugkraft des genannten Mechanismus (48—52) der auf den ersten Zugteil (5) einwirkt.

7. Vorrichtung nach Anspruch 6, dadurch gekennzeichnet, dass der Antriebsteil (4) von Kunststoff ist und dass die Zugteile (5, 6) einstückig mit dem Antriebsteil (4) in den Gebieten deren Verbindung und asu derselben Kunststoff sind, wobei der Antriebsteil (4) in der Richtung zu der Steuerhülse gedrängt wird unter Federwirkung (7) und tangentiell gerichtete aufwärtse (17) und schroff abwärtse (18) Oberflächen auf seine Endfläche gegenüber der Steuerhülse (2) hat, welche aufwärtse und abwärtse Oberflächen mit übereinstimmenden Teilen der gegenüber liegenden Endfläche der Steuerhülse zusammenarbeiten.

8. Vorrichtung nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass zwei Ausladeanschlüsse (11, 11'; 12, 12'; 13, 13') angeordnet sind für jeden Ausladepunkt und dass die genannte Rückstellvorrichtung (35—47) wirksam ist um den Antriebsteil (4) eine halbe Umdrehung zurück zu stellen.

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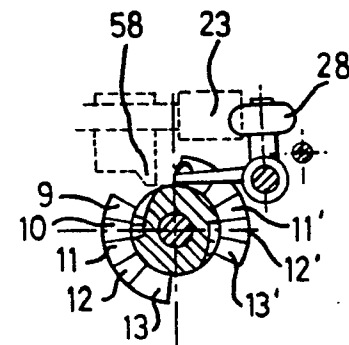
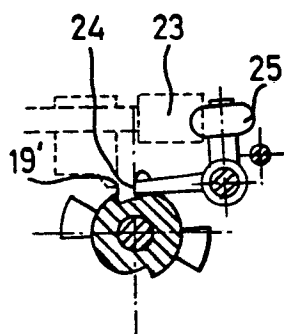
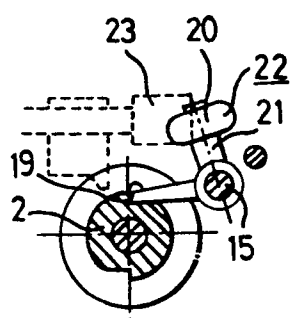
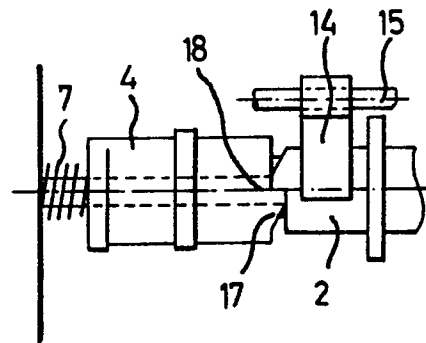
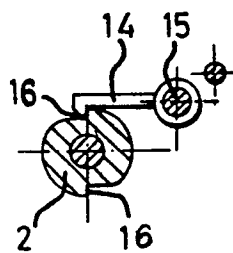
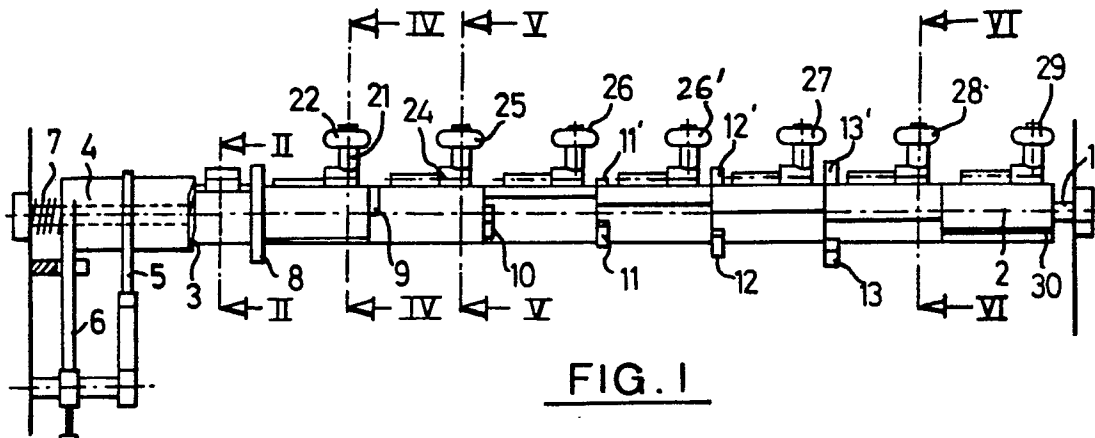


FIG. 7

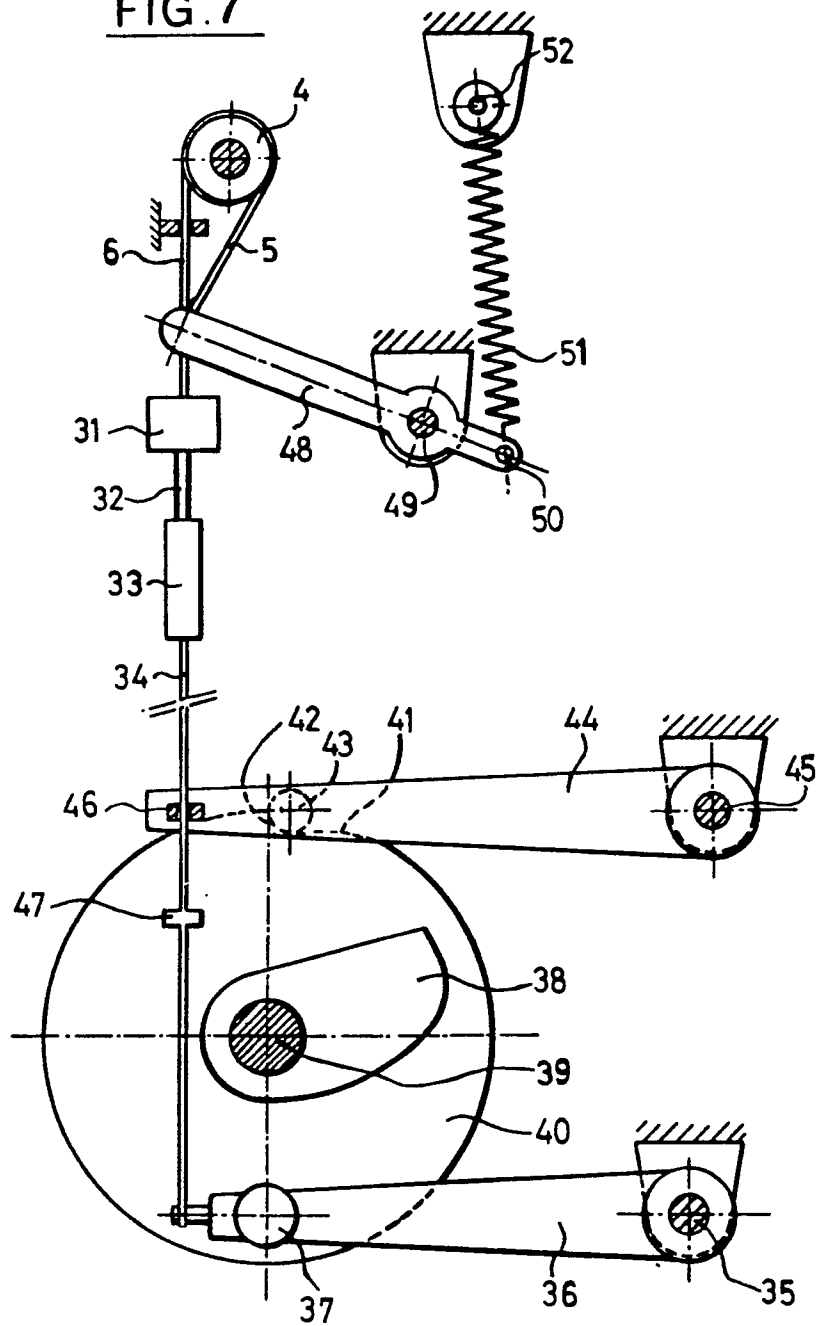


FIG. 8

